

### **Amendments to the Specification:**

Please replace the first paragraph beginning on page 1, with the following amended paragraph:

This invention is placed within the context of the furnaces for heat treatment of hydrocarbon feedstocks, such as those that are used in the production of ethylene, or higher olefins, from various fractions that can go from ethane to gas oil, but most often making use of feedstocks that are called naphtha whose boiling points extend from about 40 to 200°C. These furnaces are called steam-cracking furnaces. The invention can also be used in ~~vaporeforming~~ steamreforming furnaces such as those that are used for the production of synthesis gas from various hydrocarbon fractions that generally go from methane to naphtha. Finally, it can be used in dehydrogenations of paraffin fractions such as the C3 or C4 fraction, for which the monitoring of the temperature within narrow limits is absolutely necessary.

Please replace the paragraph beginning on page 2, line 8, with the following amended paragraph:

Convection zone (2), located above radiation zone (1) in the direction of flow of the smoke, contains a certain number of convection bundles such as (25) that recovers the considerable heat contained in the smoke i.e. flue gas. These bundles are dedicated to preheating the feedstock and the water vapor used for the dilution of the feedstock. The connection between the outlet of the convection bundle that is intended for the preheating of the feedstock and the inlet in the radiation beams is ensured by a pipe that is not shown in Figure 1 and that generally comprises a horizontal portion that is located at the base of the radiation zone that receives at its

inlet end the preheated feedstock and that distributes said feedstock along a number of identical vertical tubes, whereby each set of parallel vertical tubes forms the radiation beam.

Please replace the paragraph beginning on page 8, line 17, with the following amended paragraph:

One of the objects of the invention is to eliminate the drawbacks of the prior art. The invention consists in using the technology of radiant burners and more particularly the technology of catalytic radiant burners, in furnaces with radiant walls, such as the furnaces for steam-cracking or ~~vaporeforming~~ steam reforming hydrocarbons, where the heating intensities can lie between 50 and 500 kW/m<sup>2</sup>, and even more, whereby the surface is that of the radiant pore panels, within the scope of mean temperatures of radiant walls of between 900°C and 1300°C.

Please replace the paragraph beginning on page 21, line 11, with the following amended paragraph:

Finally, it should be emphasized that all of the advantages inherent to this invention are found when the heat-radiating bundle tubes are partially or completely filled with catalyst, such that the latter encounters synthesis gas production in the furnaces by ~~vaporeforming~~ steam reforming. In this type of furnace, the invention will contribute to protecting the catalyst that is contained inside heat-radiating bundle tubes from any risk of hot points and will therefore decrease the aging rate of the catalyst.